PRE-AMPLIFICATION SOFTWARE LINEARIZER

ABSTRACT

Pre-amplification software-based linearization of a signal that is subsequently distorted by a nonlinear amplifier to produce a signal having reduced intermodulation distortion. The predistortion that reduces the intermodulation distortion is obtained by processing the original signal using an algorithm that is based on the characteristics of

5 the nonlinear amplifier. Exemplary processing apparatus comprises circuitry that digitizing an input signal. A software linearizer processes the digitized signal to produce a pre-distorted RF signal. Circuitry is provided that converts the pre-distorted RF signal to an analog signal. A nonlinear amplifier amplifies the pre-distorted analog signal to produce an output signal corresponding to the input signal that has reduced

10 intermodulation distortion. An exemplary processing method comprises the following steps. An input signal is digitized. The digitized signal is processed to produce a pre-distorted RF signal that is to be subsequently amplified to produce a signal that has reduced intermodulation distortion. The pre-distorted RF signal is converted to an analog signal. The pre-distorted analog signal is amplified to produce an output signal

15 corresponding to the input signal that has reduced intermodulation distortion.